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PATENT APPLICATION
DocketNo.:50055/2:1 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Appleyard et al.

Serial No.: 10/019,625

Filed: December 27, 2001 (Int'l Priority Date 07/03/00)

For: HIGHLY ORIENTED MESOPHASE PITCH-BASED
GRAPHITE TAPE AND BULK CARBON MATERIAL

Examiner: Not Yet Assigned

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PRELIMINARY AMENDMENT

Commissioner for Patents
and Trademarks
Washington, D.C. 20231

Sir:

Please amend the above-identified application as follows.

IN THE CLAIMS:

Please amend claims 1-4, 6-8, 14-15, 17-18, 20, 23, and 25 as follows:

Please delete claims 5, 9-13, 16-24 and 26-32.

1. (Amended) A method for preparing mesophase pitch-based tape comprising the step of:

extruding mesophase pitch through a slot-shaped die with an aspect ratio of 50 or more and drawing at a draw ratio greater than 5, wherein the shear rate in the die is in the range 1000 to 5000s^{-1} .

2. (Amended) A method as claimed in claim 1 further comprising the step of stabilising the mesophase pitch-based tape.

3. (Amended) A method as claimed in claim 1 further comprising the step of oxidatively stabilising the mesophase pitch-based tape.

4. (Amended) A method as claimed in claim 1 wherein the mesophase pitch-based tape has a major surface and planar molecules arranged mainly parallel to the major surface.

6. (Amended) A method as claimed in claim 1 wherein the mesophase pitch based tape is subjected to an elevated temperature.

7. (Amended) A method as claimed in claim 1 wherein the aspect ratio of the die is 60 or more.

8. (Amended) A method as claimed in claim 1 further comprising the step of carbonisation or graphitisation.

14. (Amended) A method as claimed in claim 1 wherein the shear rate is in the range 1900 to 4000s⁻¹.

15. (Amended) A method as claimed in claim 1 wherein the aspect ratio of the die is about 80 and the shear rate is in the range 1700 to 4900s⁻¹.

17. (Amended) A method as claimed in claim 1 wherein the draw ratio is greater than 10.

18. (Amended) A method as claimed in claim 1 wherein the tape is of flat-layer transverse texture, said method further comprising the step of laminating the tape with a material capable of controlling the thermomechanical properties, transport properties or resistance to oxidation of the tape.

20. (Amended) A mesophase pitch-based tape obtainable from a method as defined in claim 1 comprising graphite basal planes parallel to the major surface of the tape.

23. (Amended) A mesophase pitch-based tape as claimed in claim 20 comprising a flat layer transverse texture.

25. (Amended) A mesophase pitch-based tape as claimed in claim 20 comprising an extended graphitic plane structure.